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PATENT COOPERATION TREATY



Translation

PCT

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY
(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

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|---|---|---|
| Applicant's or agent's file reference SF-970 | FOR FURTHER ACTION | See Form PCT/IPEA/416 |
| International application No. PCT/JP2003/010570 | International filing date (day/month/year) 21 August 2003 (21.08.2003) | Priority date (day/month/year) 28 August 2002 (28.08.2002) |
| International Patent Classification (IPC) or national classification and IPC H01L 21/68, 21/304, C09J 7/02 | | |
| Applicant LINTEC CORPORATION | | |

- This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.
- This REPORT consists of a total of 6 sheets, including this cover sheet.
- This report is also accompanied by ANNEXES, comprising:
 - ☐ (sent to the applicant and to the International Bureau) a total of _____ sheets, as follows:
 - ☐ sheets of the description, claims and/or drawings which have been amended and are the basis of this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions).
 - ☐ sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box.
 - ☐ (sent to the International Bureau only) a total of (indicate type and number of electronic carrier(s)) _____, containing a sequence listing and/or tables related thereto, in computer readable form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).
- This report contains indications relating to the following items:
 - ☒ Box No. I Basis of the report
 - ☐ Box No. II Priority
 - ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
 - ☐ Box No. IV Lack of unity of invention
 - ☒ Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
 - ☐ Box No. VI Certain documents cited
 - ☐ Box No. VII Certain defects in the international application
 - ☐ Box No. VIII Certain observations on the international application

| | |
|--|--|
| Date of submission of the demand 21 January 2004 (21.01.2004) | Date of completion of this report 16 August 2004 (16.08.2004) |
| Name and mailing address of the IPEA/JP | Authorized officer |
| Facsimile No. | Telephone No. |

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Box No. I Basis of the report

1. With regard to the language, this report is based on the international application in the language in which it was filed, unless otherwise indicated under this item.

- ☐ This report is based on translations from the original language into the following language _____, which is language of a translation furnished for the purpose of:
- ☐ international search (under Rules 12.3 and 23.1(b))
 - ☐ publication of the international application (under Rule 12.4)
 - ☐ international preliminary examination (under Rules 55.2 and/or 55.3)

2. With regard to the elements of the international application, this report is based on *(replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report)*:

- ☒ The international application as originally filed/furnished

- ☐ the description:

pages _____, as originally filed/furnished

pages* _____ received by this Authority on _____

pages* _____ received by this Authority on _____

- ☐ the claims:

pages _____, as originally filed/furnished

pages* _____, as amended (together with any statement) under Article 19

pages* _____ received by this Authority on _____

pages* _____ received by this Authority on _____

- ☐ the drawings:

pages _____, as originally filed/furnished

pages* _____ received by this Authority on _____

pages* _____ received by this Authority on _____

- ☐ a sequence listing and/or any related table(s) – see Supplemental Box Relating to Sequence Listing.

3. ☐ The amendments have resulted in the cancellation of:

☐ the description, pages _____

☐ the claims, Nos. _____

☐ the drawings, sheets/figs _____

☐ the sequence listing (*specify*): _____

☐ any table(s) related to sequence listing (*specify*): _____

4. ☐ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).

☐ the description, pages _____

☐ the claims, Nos. _____

☐ the drawings, sheets/figs _____

☐ the sequence listing (*specify*): _____

☐ any table(s) related to sequence listing (*specify*): _____

* If item 4 applies, some or all of those sheets may be marked "superseded."

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V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

| | | | |
|-------------------------------|--------|------------------|-----|
| Novelty (N) | Claims | 3-5, 8-15 | YES |
| | Claims | 1, 2, 6, 7 | NO |
| Inventive step (IS) | Claims | 4, 9, 11-13, 15 | YES |
| | Claims | 1-3, 5-8, 10, 14 | NO |
| Industrial applicability (IA) | Claims | 1-15 | YES |
| | Claims | | NO |

2. Citations and explanations

Document 1: JP 6-310480 A (Fujifilm Microdevices Co., Ltd.), 04 November 1994

Document 2: JP 9-115863 A (Oki Electric Ind. Co., Ltd.), 02 May 1997

Document 3: JP 2001-244317 A (Seiko Epson Corp.), 07 September 2001

Document 4: JP 2000-129227 A (Lintec Corp.), 09 May 2000

Document 5: EP 999250 A2 (Lintec Corp.), 10 May 2000

Document 6: JP 7-45559 A (The Furukawa Electric Co., Ltd.), 14 February 1995

The invention that is set forth in claim 1 is disclosed in document 1 (entire text, all drawings) cited in the international search report, document 2 (entire text, all drawings) cited in the international search report and document 3 (entire text, all drawings) cited in the international search report; therefore, it lacks novelty and does not involve an inventive step.

The invention that is set forth in claim 2 is disclosed in document 4 (entire text, all drawings) cited in the international search report; therefore, it lacks novelty and does not involve an inventive step.

The invention that is set forth in claim 3 does not involve an inventive step in the light of document 1,

document 2, document 3 or document 4.

A person skilled in the art could configure so that the part that extends beyond the external diameter of the protective sheet or the protective tape has a length of 0.1 to 10.0mm, as appropriate.

The invention that is set forth in claim 5 does not involve an inventive step in the light of document 4 and document 5 (entire text, all drawings) cited in the international search report.

Document 4 indicates that the protective sheet is configured from a plurality of films, and that the rigid film is configured so that the product of the Young's modulus of elasticity multiplied by the thickness of the film is 10^5N/m or more, while document 5 indicates that the substrate is configured so that the product of the Young's modulus of elasticity multiplied by the thickness of the film is between 1.0×10^3 and $1.0 \times 10^7 \text{N/m}$, and that the pressure sensitive adhesive sheet exhibits a one-minute-later stress relaxation ratio, at 10% elongation, of at least 40%. Therefore, a person skilled in the art could configure a protective sheet by laminating a film that exhibits a one-minute-later stress relaxation ratio, at 10% elongation, of at least 40% and a film which is configured so that the product of the Young's modulus of elasticity multiplied by the thickness of the film is $5.0 \times 10^4 \text{N/m}$ or more, simply by laminating a necessary number of layers of films that exhibit necessary characteristics in order to configure the protective sheet.

The invention that is set forth in claim 6 is disclosed in document 1, document 2 and document 3; therefore, it lacks novelty and does not involve an inventive step.

It is common practice to form circuits upon the surfaces of wafers.

The invention that is set forth in claim 7 is disclosed in document 4; therefore, it lacks novelty and does not involve an inventive step.

The invention that is set forth in claim 8 does not involve an inventive step in the light of document 1, document 2, document 3 or document 4.

A person skilled in the art could configure so that the part that extends beyond the external diameter of the protective sheet or the protective tape has a length of 0.1 to 10.0mm, as appropriate.

The invention that is set forth in claim 10 does not involve an inventive step in the light of document 4 and document 5.

Document 4 indicates that the protective sheet is configured from a plurality of films, and that the rigid film is configured so that the product of the Young's modulus of elasticity multiplied by the thickness of the film is 10^5N/m or more, while document 5 indicates that the substrate is configured so that the product of the Young's modulus of elasticity multiplied by the thickness of the film is between 1.0×10^3 and $1.0 \times 10^7 \text{N/m}$, and that the pressure sensitive adhesive sheet exhibits a one-minute-later stress relaxation ratio, at 10% elongation, of at least 40%. Therefore, a person skilled in the art could configure a protective sheet by laminating a film that exhibits a one-minute-later stress relaxation ratio, at 10% elongation, of at least 40% and a film which is configured so that the product of the Young's modulus of elasticity multiplied by the thickness of the film is $5.0 \times 10^4 \text{N/m}$ or more, simply by laminating a necessary number of layers of films that exhibit necessary characteristics in order to configure the protective sheet.

The invention that is set forth in claim 14 does not involve an inventive step in the light of document 1,

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document 2, document 3, document 4, document 5 and document 6 (entire text, all drawings) cited in the international search report.

Document 6 discloses the feature of attaching adhesive tape to the reverse surface of a wafer prior to dicing; therefore, it would be easy for a person skilled in the art to attach the adhesive tape after grinding or polishing the reverse surface of the wafer.

The inventions that are set forth in claims 4, 9, 11-13 and 15 are not disclosed in any of the documents that are cited in the international search report, and are not obvious to a person skilled in the art.